**SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF ARTS**

**AND SCIENCE (AUTONOMOUS) COIMBATORE – 641 020.**

**For candidates admitted from academic year 2013-2014 onwards**

**Under New CBCS**

**Programme : B.Sc., Mathematics.**

**Course Title : Core 4 : TRIGNOMETRY, VECTOR CALCULUS AND FOURIER SERIES Subject Code : 2C04**

**Year : First Year Semester : II**

**Hours/Week : 5 Credits : 4**

**Unit -I**

**TRIGNOMETRY :** Expansions of Cos nθ, Sin nθ, Cos θ, Sin θ, Hyperbolic functions – Separation of real and imaginary parts of Hyperbolic functions.

**Chapter. III : Sec 1, 2, 5, Chapter. IV)**

**Unit -II**

**TRIGNOMETRY :** Logarithms of Complex quantities – Summation of Trigonometric series.

 **Chapter. V: Sec 5, Chapter. VI**

**Unit III**

**VECTOR CALCULUS :** Scalar and Vector point function – Differentiation of vectors – Directional derivative – gradient, divergence and curl.

**Chapter 1 and Chapter 2**

**Unit -IV**

**VECTOR CALCULUS :** Integration of vectors – line, surface and volume integrals – Integral theorems and their applications.

**Chapter 3 and Chapter 4**

**Unit -V**

**FOURIER SERIES :** Definition – finding Fourier coefficient for a given periodic function with period 2 π – odd and even functions, Change of Interval.

**Chapter VI: Sec 1, 2, 3 and 6**

**TEXT BOOK :**

1. **Trigonometry by S. Narayanan and Manickavachagam Pillai,** S. Viswanathan (Printers and Publishers) PVT Ltd . For Units I and II.
2. **Vector Calculus by N. Namasivayam,** S. Viswanathan (Printers and Publishers) PVT Ltd. For Units III and IV.
3. **Calculus Vol III by T.K.Manicavachagam Pillay, S.Narayanan**, S.Viswanathan Printers, 2007. For Unit V.